Amendments to the Claims:

Please cancel claims 11-20. Please amend claims 1-10 as follows.

The listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently Amended) A method for recognizing stations in a home network of an OFDM-based system, wherein the home network includes starting and destination stations, the method comprising the steps of :

(a) assigning a node number to each station and assigning subchannels corresponding to the node number of each station;

(b) the starting station constructing tones corresponding to the subchannels assigned to its own node number and the node number of the destination station as a single OFDM symbol, and placing the OFDM symbol in a frame for transmission; and

(c) stations other than the starting station detecting the tones from the frame, recovering the node number using indices of the subchannels obtained from the tones, and recognizing the starting station and the destination station.

2. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the number of subchannels assigned to each node number in step (a) is calculated by dividing the number of total subcarriers by the number of nodes included in the home network.

3. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the assignments of subchannels in step (a) are performed according to the following equation:

$$D_i = \{(k \bmod d) == DSN\}, k < N/2$$
$$S_i = \{(k \bmod d) == SSN\}, k > N/2, i = 1, \cdots, M/2,$$

where N indicates the number of total subcarriers, DSN indicates a node number of the destination station, SSN indicates a node number of the starting station, D_i indicates an index of a subchannel assigned to the destination station, and S_i indicates an index of a subchannel assigned to the starting station.

4. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the OFDM symbol is placed in a foremost part of the frame in step (b).

5. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 4, wherein in step (c) a station that determines that it is the destination station receives additional symbols of the frame, while stations other than the destination station do not receive the additional symbols of the frame.

6. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the tones in step (b) that are assigned to the starting station are loaded into an upper band centering about a subcarrier frequency and the tones assigned to the destination station are loaded into a lower band centering about the same subcarrier frequency.

7. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, in which phases of the tones in step (b) are rotated pseudo-randomly according to following equation:

$$X_k = \{\ 0, k \neq S_i \text{ or } D_i,\ o \leq k \leq 256$$

$$\{\ Q_k, k = S_i, \text{ provided } Q_k[[l]] \text{ rotates by } p\pi/2,\ p = (k \bmod 4),$$

where D_i indicates indices of subchannels assigned to the destination station, and

S_i indicates indices of subchannels assigned to the starting station.

8. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the node number detection in step (c) is performed by detecting the node number of a corresponding station by modulo-calculating the indices of the subchannels by the maximum number of nodes constituting the home network.

9. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 8, wherein a node number that is most frequently detected is selected, if the node number is detected at least once.

10. (Currently Amended) The method for recognizing stations in [[a]]the home network as claimed in claim 1, wherein the tone in step (b) is expressed as $\hat{x}_n = \sqrt{\frac{N}{M}} * \tilde{x}_n$ in the time domain in order to have the same power as the power of subsequent OFDM symbols,

where M indicates the number of subchannels assigned to a single node number, N indicates the number of total subcarriers, and $\tilde{x}_n$ indicates each modulated subcarrier in which a cyclic prefix is inserted.

11. – 20. (Canceled)